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TED SCHWINDEN, GOVERNOR

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STATE OF MONTANA

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KALISPELL, MONTANA 59901

March 4, 1982

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Lincoln County Commissioners, Attn: R.W. Lindsey, Libby, MT 59923
Lincoln County Sheriff, Libby, MT 59923
Dept. of Health & Environmental Sciences Information Unit, Cogswell Bldg., Helena, MT
Dept. of Health & Environmental Sciences Subdivision Bureau, Ed Casne, Chief, Helena, MT
Montana Historical Society, 225 N. Roberts, Helena, MT 59601
Troy Rural Fire District, Bill Winslow, Chief, Troy, MT 59935
William H. Rice, Mayor, Town of Troy, City Hall, Troy, MT 59935
Floyd C. Cole, Box 278, Troy, MT 59935
Terry Schultz, Hill Co. Planning Dept. Havre, MT (formerly Northwestern Land Co.)
R. McCombs, Wilderness Plateau, Inc., 5810 Cree Dr. Spokane, WA 99206
Thomas, Dean & Hoskins, Inc., Mike Fraser, P.E., 3 Sunset Plaza, Kalispell, MT 59901
Troy Supt. of Schools, C.W. Fletcher, Troy, MT 59935
Lincoln Co. Health Officer, Dr. R. Irons, % Ron Anderson, 418 Mineral Ave., Libby, MT

Re: Wilderness Plateau Subdivision, Lincoln County, Montana

Ladies & Gentlemen:

The enclosed preliminary environmental review has been prepared in conformance to procedural rules 16.2.603 for Wilderness Plateau Subdivision in Lincoln County and is submitted for your consideration. Questions and comments will be accepted until March 20, 1982. One extension of time not to exceed seven days will be granted upon request if there is sufficient reason for the request. All comments should be sent to the undersigned.

Sincerely,

A handwritten signature in dark ink, appearing to read "Stan C. Strom".

Stan C. Strom, R.S.
Subdivision Bureau
Environmental Sciences Division

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PRELIMINARY ENVIRONMENTAL REVIEW

Division/Bureau Environmental Sciences Division/Subdivision Bureau

Project or Application Wilderness Plateau Subdivision, Lincoln County

Description of Project The proposed subdivision is to be located 2.0 miles southeast of Troy along Highway 2 in Sections 19 & 20, Township 31 North, Range 33 West, Lincoln County, Montana. The proposed plat is to create 93 lots ranging in size from .506 acres to 1.226 acres. A community water system (domestic supply capability) is planned and sewage disposal is to be accomplished utilizing onsite septic tank/drainfield systems. Solid waste is to be disposed of at the Libby Sanitary Landfill and a collection point near the subdivision will be utilized.

POTENTIAL IMPACT ON PHYSICAL ENVIRONMENT

	Major	Moderate	Minor	None	Unknown	Comments on Attached Pages
1. Terrestrial & aquatic life and habitats		xxx				See Note 1
2. Water quality, quantity and distribution			xxx			See Note 2
3. Geology & soil quality, stability and moisture				xxx		
4. Vegetation cover, quantity and quality			xxx			
5. Aesthetics			xxx			
6. Air quality					xxx	
7. Unique, endangered, fragile, or limited environmental resources				xxx		
8. Demands on environmental resources of land, water, air & energy			xxx			
9. Historical and archaeological sites					xxx	

POTENTIAL IMPACTS ON HUMAN ENVIRONMENT

	Major	Moderate	Minor	None	Unknown	Comments on Attached Pages
1. Social structures and mores			xxx			
2. Cultural uniqueness and diversity			xxx			
3. Local and state tax base & tax revenue			xxx			See Note 4
4. Agricultural or industrial production				xxx		
5. Human health				xxx		
6. Quantity and distribution of community and personal income			xxx			
7. Access to and quality of recreational and wilderness activities			xxx			
8. Quantity and distribution of employment				xxx		
9. Distribution and density of population and housing		xxx				See Note 3
10. Demands for government services			xxx			See Note 3
11. Industrial & commercial activity		xxx				See Note 3
12. Demands for energy			xxx			
13. Locally adopted environmental plans & goals			xxx			
14. Transportation networks & traffic flows		xxx				See Note 4

Other groups or agencies contacted or which may have overlapping jurisdiction Lincoln County Dept. of Environmental Planning

Individuals or groups contributing to this PER. Contributors are noted in comments

Recommendation concerning preparation of EIS EIS not warranted

PER Prepared by: Stan C. Strom, R.S.

Date: March 4, 1982

PRELIMINARY ENVIRONMENTAL REVIEW

Wilderness Plateau

Lincoln County, MT

According to a hydrology report by (Kuennen and Tolle, 1980) and a hydrogeologic report by (Fraser, 1982) the general area of this subdivision consists of morainal and alluvial material, sandy and gravelly loams over low clay tills, glacio-fluvials, lacustrine deposits and drift gravels. The surface soils are mostly well drained gravelly and sandy loams, and some silt loams.

The majority of the area is forested with Ponderosa, Douglas Fir and Larch overstory still fairly dense despite some logging in the past. A dense understory of brush and grasses typical of northwest Montana is present on the site with increased density in and around the power line easement. Utility as game range (browse and cover) was evident, notwithstanding the fact that the area is bounded on three sides by well traveled roads (Highway 2, Lake Creek Road and State Highway 56).

The most contentious topics of environmental impact from this development include loss of game range, sewage effects on groundwater and surface water and highway access road safety.

NOTE 1

The elimination of game range and wildlife habitat resulting from this land use change is one of the more important effects associated with this proposal, especially when viewed in the context of regional development which includes other subdivisions near Schoolhouse Lake, Milnor Lake and Savage Lake. These incremental losses of range and habitat have a regional effect of greater significance and account for much of the concern expressed over game range in connection with this proposal. There is, however, no particular limit or short supply of such area in the Troy-Bull Lake area, and the particular habitat is not held to be critical, therefore the impact is considered to be in the moderate range.

NOTE 2

A hydrogeologic report by Thomas, Dean & Hoskins, Inc., September, 1981 and a geology and groundwater report by the same firm indicate that groundwater depth is variable at the development site. Much of the area immediately to the south of the site (near Schoolhouse Lake and Mud Lake) which is approximately 140 to 180 feet higher in elevation is subject to shallow groundwater at depths of 40 to 50 feet from the surface. The test well in the subdivision site indicates water at 160 feet and did not reveal the presence of an aquifer above that level in the drill hole. This well log showed gravelly horizons to 26 feet and deep soil layers with increased percentage of silt and clay fines. These fines (over 100 feet in thickness) due to slower conductivity could create a short term saturation zone or perched groundwater condition in certain parts of the area. However, the principal local aquifer underlying this property lies at a depth of 160 feet+ (at elevation 1960).



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Northeast of this area approximately 0.2 miles a spring belonging to Mr. Floyd Cole and several other springs along the bluff of the Kootenai River canyon emanate (at elevation 1940) apparently fed by the same aquifer. Although there is no clear association between the spring aquifer and the onsite well aquifer, the respective chemical analyses show similarity and the elevations establish a slope in the piezometric surface downward in the direction of the spring, south to north. It is felt that the springs are probably associated with the aquifer and that chemical contamination of the aquifer will mean contamination of the springs. Examinations of the soils profiles, the well logs and the geology and groundwater report of Thomas, Dean & Hoskins (February, 1982) indicate that the hazard to biological contamination of this aquifer from sewer effluent in the subdivision is remote indeed. The length of travel of bacteria in the unsaturated zone of such porous media as the sand and gravel that is in the subdivision is usually short. Romero (1970)* reviewed the literature on the travel of bacteria and viruses through porous media. He shows no instances of movement greater than about 13 feet, and he says that the maximum lengths of travel appear to be in the vicinity of ten feet, in saturated conditions.

The only constituent of concern which may migrate downward to the silt deposits above the aquifer is nitrates. Determinations of expected nitrate migration done by Thomas, Dean & Hoskins predicted potential nitrate increases far below those of significance to human health and well within the safe drinking water standards. There is reason to believe that the majority of the recharge this aquifer is generally south including the Lake Creek area, the Troy Reservoir and nearby mountain slopes. The recharge from the subdivision area will be subject to such an extremely large dilution factor, nitrates will likely be below detection limits.

No untreated storm discharge or runoff will enter State waters.

NOTE 3

A development of this magnitude can create a negative effect on the life styles of residents of this rural area, as well as a negative effect on the community nearby by detracting from local housing concentrations. Little concern along these lines has been vocalized, however, and it is generally regarded by the residents of the area to be desirable to have subdivision development despite the fact that it is remote from the established community. It is predictable that in time, as the Lake Creek area grows in rural population there will be a concomitant shift in business and commercial activity to this same general area.

One demand for government services which may need further consideration is fire protection. During local government review the water system for this project had provision for hydrants and fire flows, while the plans and specifications now being reviewed by the Water Quality Bureau are for a domestic water system only (without fire protection capability). The impact on government services is only minor to the extent that the rural fire department agrees to serve the development without a fire flow water system, and that the local government (planning department and county commissioners) approval is valid despite this change in plans.

* Romero, J.C. (1970): The movement of bacteria and viruses through porous media; Groundwater, Vol. 8, No. 2, P. 34-48.

NOTE 4

H.G. Wheeler, P.E. of the Dept. of Highways had the following comments about safety on the adjacent arterials and traffic loads in a letter to the Lincoln County Planning Dept.

"We note that the proposed subdivision fronts on U.S. Highway #2, a principal arterial, carrying approximately 2,085 ADT (Average Daily Traffic). U.S. #2 in the vicinity of the proposal has experienced a 7% growth rate. It was built in the late 1930's. We feel that it would have the capacity to carry some of the traffic from the proposal; however, it is not of sufficient width and safety to handle a significant amount of traffic particularly where it intersects the Bull Lake Road, State Route #56."

"State Route #56 is a minor arterial carrying approximately 931 ADT. It has a growth rate of about 7% also. However, it is rated quite poor in safety aspects. There have been approximately 12 serious accidents within the last three years within about a 6½ mile stretch where U.S. 56 encounters U.S. 2. Lake Creek Road which abutts the western portion of the proposed subdivision is a major collector. We don't have any traffic counts on this roadway."

"The Department of Highways is proposing a project, hopefully to be submitted to contract in late summer or early fall of 1980, for a weigh station on the southeast corner of the intersection of Route 2 and Route 56. We would expect accelerating and decelerating actions from a number of the trucks that use each of these routes and therefore we would like to see as few road approaches as is possible in the immediate vicinity of this busy intersection."

"We note that the residential portion of the subdivision would generate between 475 and 665 ADT whereas the commercial portion could generate between 1,750 and 4,100 trips per day depending on the type of commercial development. In order to maintain as much safety and reduce the number of turning movements as much as possible along Lake Creek Road, U.S. #2 and State Route #56, we propose the following: We would suggest a no access strip along lots 1 and 2 of block 1 where they front on Lake Creek Road. Similarly a no access strip on lots 1 and 3 block 2, lots 1,4 & 5 of block 3 where they front on Lake Creek Road. Also with lot 1 block 1 a no access strip should be planned for the frontage of U.S. 2. Also lot A from its intersection with Lake Creek Road eastward to Station 1033 approximately (the end of the curve) should have a no access strip as should that portion fronting U.S. 2 from its intersection with State Route 56 about 250 feet westerly. Also from the intersection of U.S. 2 and State Route 56 southward approximately 250 feet there should be a no access strip. We recognize that that latter portion of the no access strip may be out of the control of the developer; however, we are suggesting it if it would be possible."

Requirements for access and consideration of the above concerns is to be included in local government review and conditions of approval.

Future changes or widening of access lanes will have impacts on state and local tax revenues but will become necessary as population and tax base increase.

C.W. Fletcher, Troy Supt. of Schools, has provided the following data concerning the additional 143 students at full development of the subdivision and its relationship to that school district. Due largely to an effective planning and building program, an additional 150 students can be accomodated in the elementary, junior high and highschoools without additional facilities.

The first part of the paper is devoted to a general discussion of the problem of the origin of life. It is shown that the problem is one of the most important and most difficult in the history of science. The author then proceeds to a detailed examination of the various theories which have been proposed to explain the origin of life. He discusses the theory of spontaneous generation, the theory of biogenesis, and the theory of abiogenesis. He also discusses the theory of the origin of life from non-living matter, and the theory of the origin of life from living matter. The author concludes that the theory of abiogenesis is the most plausible of the theories which have been proposed. He also discusses the possibility of the origin of life on other planets, and the possibility of the origin of life from extraterrestrial matter.

The second part of the paper is devoted to a detailed examination of the various theories which have been proposed to explain the origin of life. It is shown that the problem is one of the most important and most difficult in the history of science. The author then proceeds to a detailed examination of the various theories which have been proposed to explain the origin of life. He discusses the theory of spontaneous generation, the theory of biogenesis, and the theory of abiogenesis. He also discusses the theory of the origin of life from non-living matter, and the theory of the origin of life from living matter. The author concludes that the theory of abiogenesis is the most plausible of the theories which have been proposed. He also discusses the possibility of the origin of life on other planets, and the possibility of the origin of life from extraterrestrial matter.

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